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Occurrence of scab disease of pecan caused by *Cladosporium caryigenum* in Argentina

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Pecan (*Carya illinoinensis*) is a new crop in Argentina. The planted area is expanding quickly with around 4000 h in the Pampas region, an area characterized by around 1000 mm annual rainfall and high humidity. In 2007 and 2008 typical scab symptoms on seedlings and mature trees were commonly observed in La Plata: small, circular black leaf spots, often coalescing, and an olive-green to black mould below. Nuts, twigs and petioles also had black spots.

A *Cladosporium*-like fungus was isolated on potato dextrose agar (PDA) from surface-sterilized pecan leaves collected from the Experimental Station of UNLP, La Plata. The conidiophores were dark brown, erect and septate (50–188 × 4–5 μm). Conidia were in chains, irregular, ovoid to ellipsoid, a few with two cells, pale olive green, (4–8 × 6–22 μm). These characteristics agree with a published description of *Cladosporium caryigenum* (Gottwald, 1982).

Detached leaves from one year-old seedlings, obtained from a tree selected as a source of rootstock were inoculated with the *C. caryigenum* isolate using a modified method described by Conner (2002). Conidia were harvested from two week-old PDA cultures grown at 24°C and a suspension in sterile distilled water adjusted to 1×10^6 conidia mL^{-1}. The suspension was lightly brushed across the leaf surface while control treatments used sterile distilled water. All leaves were incubated for eight days at 25°C and 16 h photoperiod. One cm^2 pieces from the leaf centre were bleached and stained with trypan blue. Only inoculated leaves contained subcuticular hyphae and initial reproductive structures of *C. caryigenum* typical of a susceptible response (Conner & Stevenson, 2004). Pecan scab was reported from Paraguay by Kobayashi (1984) and there are earlier unconfirmed reports from Argentina. This, however, is the first confirmed report of *C. caryigenum* causing pecan scab in Argentina.

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References

Conner PJ, 2002. A detached leaf technique for studying race-specific resistance to *Cladosporium caryigenum* in pecan. *Journal of the American Society of Horticultural Science* **127**, 781–5.

Conner PJ, Stevenson KL, 2004. Pathogenic variations of *Cladosporium caryigenum* isolates and corresponding differential resistance in pecan. *HortScience* **39**, 553–7.

Gottwald TR, 1982. Taxonomy of the pecan scab fungus *Cladosporium caryigenum*. *Mycologia* **74** (Suppl. 3), 382–90.

Kobayashi T, 1984. Notes on fungi parasitic to woody plants in Paraguay. *Transactions of the Mycological Society of Japan* **25**, 255–73.

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First Croatian report of powdery mildew on tomato caused by *Oidium neolycopersici*

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During 2008 powdery mildew symptoms were observed on tomato plants (*Solanum lycopersicum*) grown in a greenhouse in north-western Croatia. Whitish rounded spots of superficial mycelium were present on the upper surfaces of the leaves, with some stems also covered with white patches. Disease severity was low, but the number of plants with symptoms was high.

As symptoms were clearly different from those caused by *Leveillula taurica*, mildew affected leaves were examined microscopically. Hyaline hyphae, conidiophores and conidia produced solitarily or apparently in chains were observed under the stereomicroscope. Mycelium on the leaf surface was stripped off with adhesive tape and fungal structures were analysed dry using light microscopy. Conidia were ellipsoid-ovoid or doliform, 24–42 × 14–20 μm, while conidiophores were 79–107 μm long with cylindrical foot-cells. On the basis of these characters, the pathogen was identified as *Oidium neolycopersici* (Kiss *et al.*, 2001).

Pathogenicity tests were performed on five tomato plants (cv. Belle) in pots. Fragments of the diseased leaves were pressed onto previously wetted leaves of healthy plants. Inoculated plants were covered with polyethylene bags and incubated at 20–25°C with a 12-h photoperiod. Polyethylene bags and leaf fragments used for inoculation were removed after two days. First symptoms on leaves were observed five days after inoculation. Two weeks after inoculation, powdery mildew patches completely covered inoculated leaves, which became chlorotic. Symptoms were also evident on stems of all inoculated plants. Morphological features of the powdery mildew fungus developed on inoculated plants were similar to those of *Oidium neolycopersici*. Infected leaves were deposited as herbarium specimens in the Department of Plant Pathology collection.

Oidium neolycopersici is present in many European countries, including Hungary, a country bordering Croatia (Mieslerová & Lebeda, 1999; Kiss *et al.*, 2001). Tomato powdery mildew caused by *O. neolycopersici* can cause significant damage on greenhouse-grown tomatoes and is becoming increasingly important on field-grown tomato crops in many countries around the world (Jones *et al.*, 2001). Most of the existing tomato cultivars have shown to be susceptible (Mieslerová & Lebeda, 1999). As tomato is among the most popular greenhouse crops in Croatian vegetable production, it is likely that this disease could become problematic and lead to economic losses in future. This is the first report of *O. neolycopersici* on tomato in Croatia.

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References

Jones H, Whipps JM, Gurr SJ, 2001. The tomato powdery mildew fungus *Oidium neolycopersici*. *Molecular Plant Pathology* **2**, 303–9.

Kiss L, Cook RTA, Saenz GS *et al.*, 2001. Identification of two powdery mildew fungi, *Oidium neolycopersici* sp. nov. and *O. lycopersici*, infecting tomato in different parts of the world. *Mycological Research* **105**, 684–97.

Mieslerová B, Lebeda A, 1999. Taxonomy, distribution and biology of the tomato powdery mildew (*Oidium lycopersici*). *Journal of Plant Diseases and Protection* **106**, 140–57.

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